

Witherspoon 10/715,607

ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:609952 CAPLUS

DOCUMENT NUMBER: 141:157893

Entered STN: 30 Jul 2004 ENTRY DATE:

TITLE: Novel monofunctional polyethylene glycol aldehydes

useful for pegylation

Rosen, Perry; Nho, Kwang INVENTOR(S):

PATENT ASSIGNEE(S): USA

U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. SOURCE:

> Ser. No. 661,268. CODEN: USXXCO

DOCUMENT TYPE:

Patent English

LANGUAGE:

INT. PATENT CLASSIF.:

MAIN:

C08G065-32

US PATENT CLASSIF.: 525389000; 525403000

37-3 (Plastics Manufacture and Processing) CLASSIFICATION:

Section cross-reference(s): 63

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
us 2004147687	A1	20040729	US 2003-715607	20031118 <
KR 2003048293	A	20030619	KR 2001-78244	20011211
us 2003040233	A1	20030814	US 2002-303260	20021125
US 2004034188	A1	20040219	US 2003-431294	20030507
US 6916962	B2	20050712		
US 2004122164	A1	20040624	US 2003-661268	20030912
PRIORITY APPLN. INFO.:			KR 2001-78244	A 20011211
•			US 2002-348452P	P 20020116
		•	US 2002-381503P	P 20020517
			US 2002-407741P	P 20020903
_			US 2002-303260	A2 20021125
			US 2003-431294	A2 20030507
			US 2003-661268	A2 20030912
PATENT CLASSIFICATION CO				
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PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004147687	ICM INCL	C08G065-32 525389000; 525403000
US 2004147687	NCL	525/389.000; 525/403.000
US 2003153694	ECLA NCL	C08G065/324; C08G065/329; C08G065/331; C08G065/333U < 525/523.000; 558/260.000; 560/157.000; 564/060.000
	ECLA	C08G065/329; C08G065/331; C08G065/333U
US 2004034188	NCL ECLA	528/230.000; 528/250.000 C08G065/324; C08G065/329; C08G065/331; C08G065/333U
US 2004122164	NCL	525/054.100; 528/230.000; 525/526.000
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U

ABSTRACT:

The present invention provides novel monofunctional polyethylene glycol aldenydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

polyethylene glycol aldehyde therapeutic active protein SUPPL. TERM:

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pegylation
                   Polyoxyalkylenes, preparation
INDEX TERM:
                   ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
                   BIOL (Biological study); PREP (Preparation); USES (Uses)
                      (aldehyde derivs.; novel monofunctional polyethylene
                      glycol aldehydes for pegylation of therapeutically active
                      proteins)
                   Proteins
INDEX TERM:
                   ROLE: THU (Therapeutic use); BIOL (Biological study); USES
                   (Uses)
                      (pegylation of; novel monofunctional polyethylene glycol
                      aldehydes for pegylation of therapeutically active
                      proteins)
                 6318-30-5P 58320-73-3P 67665-18-3P
INDEX TERM:
                   , Methoxypolyethylene glycol acetic acid 67665-19-4P
                   , Methoxypolyethylene glycol ethyl acetate
                   124661-64-9P 135649-01-3P
                   146167-55-7P 544706-94-7P
                   544706-96-9P 544707-00-8P
                   544707-01-9P 544707-03-1P
                   544707-04-2P 544707-06-4P
                   658083-74-0P 658083-75-1P
                   727741-77-7P
                   ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                   (Preparation); RACT (Reactant or reagent)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
                 79-10-7DP, Acrylic acid, addition products with
INDEX TERM:
                  methoxypolyethylene glycol, ester-with hydroxysuccinimide,
                   amide derivative, urethane propionaldehyde 6066-82-6DP
                    N-Hydroxysuccinimide, ester with methoxypolyethylene
                   glycol acrylic acid addition product, amide derivative, urethane
                   propionaldehyde 9004-74-4DP, Methoxypolyethylene
                   glycol, addition products with acrylic acid, ester with
                   hydroxysuccinimide, amide derivative, urethane propionaldehyde
                   41365-75-7DP, displacement reaction products with
                   hydroxysuccinimide esterified methoxypolyethylene glycol
                   acrylic acid addition product, deacetalized compound
                   533881-58-2P 544706-95-8P
                   544706-97-0P 544706-99-2P
                   544707-02-0P 544707-05-3P
                   544708-06-7P
                   ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
                   BIOL (Biological study); PREP (Preparation); USES (Uses)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
INDEX TERM:
                 67-64-1, Acetone, reactions 98-59-9, Tosyl
                   chloride 105-36-2, Ethyl bromoacetate
                  1659-31-0; Di-2-pyridyl-carbonate-6066-82-6
                   , N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl
                   chloroformate 9004-74-4, Methoxypolyethylene
                   glycol 14533-84-7, Pentafluorophenyl
                   trifluoroacetate 14697-46-2, Pentane-1,2,5-triol
                   19060-15-2 32315-10-9, Triphosgene
                   41365-75-7 80506-64-5 125220-94-2
                   , Methoxypolyethylene glycol propionic acid
                   ROLE: RCT (Reactant); RACT (Reactant or reagent)
                      (novel monofunctional polyethylene glycol aldehydes for
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pegylation of therapeutically active proteins)

IT 6318-30-5P 58320-73-3P 67665-18-3P,

Methoxypolyethylene glycol acetic acid 67665-19-4P,

Methoxypolyethylene glycol ethyl acetate 124661-64-9P

135649-01-3P 146167-55-7P 544706-94-7P

544706-96-9P 544707-00-8P 544707-01-9P

544707-03-1P 544707-04-2P 544707-06-4P

658083-74-0P 658083-75-1P 727741-77-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

(Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 6318-30-5 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)

RN 58320-73-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-methylphenyl)sulfonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\mathsf{MeO} = \left[\begin{array}{c} \mathsf{CH}_2 - \mathsf{CH}_2 - \mathsf{O} \\ \mathsf{N} \end{array} \right] \left[\begin{array}{c} \mathsf{MeO} \\ \mathsf{N} \end{array} \right]$$

RN 67665-18-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2$$
 CH_2 CH_2 CH_2 CH_2 CH_2 CH_2

RN 67665-19-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy-(9CI) (CA INDEX NAME)

RN 124661-64-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-nitrophenoxy)carbonyl]- ω -

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methoxy- (9CI) (CA INDEX NAME)

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RN 135649-01-3 CAPLUS

Poly(oxy-1,2-ethanediyl), α -[[(2,5-dioxo-1-CN pyrrolidinyl)oxy]carbonyl]-ω-methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
 & O \\
 & O \\$$

146167-55-7 CAPLUS RN

Poly(oxy-1,2-ethanediy1), α -methyl- ω -[2-[[(2-CN pyridinyloxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

544706-94-7 CAPLUS RN

Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-CN oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$\longrightarrow$$
 CH2 - CH2 - O \longrightarrow CH2 - CH2 - CH2 - CH - OET

RN 544706-96-9 CAPLUS

Poly(oxy-1,2-ethanediy1), α -[3-[(4,4-dimethoxybuty1)amino]-3-CN oxopropyl]-ω-methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} \text{O} & \text{OMe} \\ & \parallel & \parallel \\ \text{CH}_2 - \text{CH}_2 - \text{O} & \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH}_1 & \text{CH}_2 \\ \end{array}$$

RN 544707-00-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(4,4-dimethoxybutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[(3,3-diethoxypropyl)amino]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX NAME)

RN 544707-04-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propoxy]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-06-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propyl]- ω -methoxy- (9CI) (CA INDEX NAME)

Me O (CH₂)₃
$$-$$
 O CH₂ - CH₂ $-$ OMe

RN 658083-74-0 CAPLUS

Poly(oxy-1,2-ethanediyl), $\alpha-[3-(2,5-dioxo-1-pyrrolidinyl)-2-$ CNoxopropyl]-ω-methoxy- (9CI) (CA INDEX-NAME)

$$\begin{array}{c|c} CH_2-C-CH_2 & \boxed{} O-CH_2-CH_2 & \boxed{} OMe \\ \hline \\ N & O \end{array}$$

658083-75-1 CAPLUS RN

Poly(oxy-1,2-ethanediyl), α -[[(3,3-diethoxypropyl)amino]carbonyl]-CN ω-methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} \text{OEt} & \text{O} \\ \mid & \mid \\ \text{EtO-CH-CH}_2\text{-CH}_2\text{-NH-C} & \text{O-CH}_2\text{-CH}_2 \\ \hline \end{array}$$

RN 727741-77-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-(pentafluorophenoxy)propoxy] - (9CI) (CA INDEX NAME)

IT 79-10-7DP, Acrylic acid, addition products with methoxypolyethylene glycol, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 6066-82-6DP, N-Hydroxysuccinimide, ester with methoxypolyethylene glycol acrylic acid addition product, amide derivative, urethane propionaldehyde 9004-74-4DP, Methoxypolyethylene glycol, addition products with acrylic acid, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 41365-75-7DP, displacement reaction products with hydroxysuccinimide esterified methoxypolyethylene glycol acrylic acid addition product, deacetalized compound 533881-58-2P 544706-95-8P 544706-97-0P

544706-99-2P 544707-02-0P 544707-05-3P

544708-06-7P

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 79-10-7 CAPLUS

2-Propenoic acid (9CI) (CA INDEX NAME) CN

RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

RN 9004-74-4 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α-methyl-ω-hydroxy- (9CI) (CA INDEX NAME)...

$$HO = \begin{bmatrix} CH_2 - CH_2 - O \end{bmatrix}_n CH_3$$

RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)

RN 533881-58-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy)- (9CI) (CA INDEX NAME)

and the control of th

OHC-
$$(CH_2)_3$$
-O- CH_2 - CH_2 - CH_2 -O- I_n

RN 544706-95-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544706-97-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
 - NH- C CH_2 - CH

RN 544706-99-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(4-oxobutyl)amino]carbonyl]- ω -methoxy-(9CI) (CA INDEX NAME)

$$\mathsf{OHC-}(\mathsf{CH}_2)_3-\mathsf{NH}-\overset{\mathsf{O}}{\mathsf{C}} - \overset{\mathsf{O}}{\underbrace{\hspace{1cm}}} \mathsf{O-}\mathsf{CH}_2-\mathsf{CH}_2 - \overset{\mathsf{I}}{\underbrace{\hspace{1cm}}} \mathsf{n} \mathsf{OMe}$$

RN 544707-02-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544707-05-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544708-06-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(3-oxopropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

IT 67-64-1, Acetone, reactions 98-59-9, Tosyl chloride 105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl chloroformate 9004-74-4, Methoxypolyethylene

glycol 14533-84-7, Pentafluorophenyl trifluoroacetate 14697-46-2, Pentane-1,2,5-triol 19060-15-2

32315-10-9, Triphosgene 41365-75-7 80506-64-5

125220-94-2, Methoxypolyethylene glycol propionic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

major kalam manang sebagai dan menjelah kalam menjelah pengendan menjelah menjelah menjelah menjelah menjelah d

RN 67-64-1 CAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)

RN 98-59-9 CAPLUS

CN Benzenesulfonyl chloride, 4-methyl- (9CI) (CA INDEX NAME)

RN 105-36-2 CAPLUS

CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

RN 1659-31-0 CAPLUS

CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)

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RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

RN 7693-46-1 CAPLUS

CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)

RN 9004-74-4 CAPLUS.

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -hydroxy- (9CI) (CA INDEX NAME)

HO
$$CH_2-CH_2-O$$
 CH_3

RN 14533-84-7 CAPLUS

CN Acetic acid, trifluoro-, pentafluorophenyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 14697-46-2 CAPLUS

CN 1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

RN 19060-15-2 CAPLUS

CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)

RN 32315-10-9 CAPLUS

CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)

RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-aminoethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2-CH_2-O$$
 $CH_2-CH_2-NH_2$

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2 - CH_2 - O$$
 $CH_2 - CH_2 - CH_2 - CO_2H_2$

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:

2004:513373 CAPLUS

DOCUMENT NUMBER:

141:72062

ENTRY DATE:

Entered STN: 25 Jun 2004

TITLE:

monofunctional polyethylene glycol aldehydes,

preparation and protein conjugate

INVENTOR(S):

Rosen, Perry; Nho, Kwang H.

PATENT ASSIGNEE(S):

USA

SOURCE:

U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S.

Pat. Appl. 2004 34,188.

CODEN: USXXCO

DOCUMENT TYPE:

Patent

LANGUAGE:

English

INT. PATENT CLASSIF.:

MAIN:

C08G065-00

SECONDARY:

C08G063-48; C08G063-91

US PATENT CLASSIF.:

525054100; 528230000; 525526000

CLASSIFICATION: 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 63

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

	PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
	US 200412216 KR 200304829 US 200315369 US 200403418 US 6916962 US 200414768 PRIORITY APPLN. I	54 93 94 98 88 37 INFO::	A1 A A1 A1 A1 B2 A1	20040624 20030619 20030814 20040219 20050712 20040729	US 2003-661268 KR 2001-78244 US 2002-303260 US 2003-431294 US 2003-715607 KR 2001-78244 US 2002-303260 US 2003-431294 US 2003-431294 US 2002-348452P	20030912 20011211 20021125 20030507
	PATENT CLASSIFICA			FAMILY CLASS	US 2002-381503P US 2002-407741P US 2003-661268 IFICATION CODES	P 20020517 P 20020903
	TG 200/122164		0000065			
	US 2004122164 US 2004122164	ICM ICS INCL NCL ECLA	5250541 525/054 C08G065	-48; C08G063 00; 52823000 .100; 528/23 /324; C08G06	0; 525526000 0.000; 525/526.000 5/329; C08G065/331;	
	US 2003153694	NCL			0.000; 560/157.000;	
	US 2004034188	ECLA NCL ECLA	528/230	.000; 528/25	5/331; C08G065/333U 0.000 5/329; C08G065/331;	
	US 2004147687	NCL		.000; 525/40		000006E /222U
ECLA C08G065/324; C08G065/329; C08G065/331; C08G065/333U <abstract: a="" active="" activity="" aldehydes="" and="" are="" conjugate="" conjugates="" derived.<="" for="" from="" glycol="" immunogenic="" is="" less="" monofunctional="" of="" pegylated="" pegylation="" polyethylene="" portion="" produced,="" protein="" proteins.="" retain="" substantial="" td="" than="" that="" the="" their="" therapeutic="" therapeutically="" used="" which=""></abstract:>						
	SUPPL. TERM: INDEX TERM:	Prote ROLE	eins	iological us	hyde pegylated prot e, unclassified); B	
		() p:	oolyethy roteins)	lene glycol	aldehydes for conju	gates with
INDEX TERM: Polyoxyalkylenes, preparation ROLE: BUU (Biological use, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses) (polyethylene glycol aldehydes for conjugates with proteins)						
	INDEX TERM:	14697-	46-2 , Pe : RCT (R cyclizat	ion; polyeth	CT (Reactant or rea ylene glycol aldehy	des for
	INDEX TERM:	112344 copo amin 5338 5447	-11-3DP, lymer, r odiethox 81-58-2P 06-97-0P	Acrylic aci eaction prod ypropane, an 544706-95-8 544706-99-2 544707-05-3	d-ethylene oxide gr ucts with hydroxysu d aldehyde formatio P P	ccinimide,

```
ROLE: IMF (Industrial manufacture); PREP (Preparation)
    (polyethylene glycol-aldehydes-for conjugates with
                     proteins)
                67665-19-4P 92451-01-9P
INDEX TERM:
                  544706-94-7P 544706-96-9P
                  544706-98-1P 544707-00-8P
                  544707-01-9P 544707-04-2P
                  544707-06-4P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                      (polyethylene glycol aldehydes for conjugates with
                     proteins)
                1659-31-0, Di-2-pyridyl carbonate 9004-74-4
INDEX TERM:
                  , Methoxypolyethylene glycol
                  ROLE: RCT (Reactant); RACT (Reactant or reagent)
                     (polyethylene glycol aldehydes for conjugates with
                     proteins)
INDEX TERM:
                135649-01-3P 146167-55-7P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                     (reaction with aminodiethoxypropane; polyethylene glycol
 aldehydes for conjugates with proteins)
INDEX TERM:
                124661-64-9P 174569-25-6P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                     (reaction with aminodimethoxybutane; polyethylene glycol
                     aldehydes for conjugates with proteins)
INDEX TERM:
                58320-73-3P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                     (reaction with dioxolanedimethylpropanol; polyethylene
                     glycol aldehydes for conjugates with proteins)
INDEX TERM:
                80506-64-5
                  ROLE: RCT (Reactant); RACT (Reactant or reagent)
                     (reaction with dipyridiyl carbonate; polyethylene glycol
                     aldehydes for conjugates with proteins)
INDEX TERM:
                67665-18-3P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                      (reaction with hydroxysuccinimide; polyethylene glycol
                     aldehydes for conjugates with proteins)
INDEX-TERM:-----125220-94-2------
                  ROLE: RCT (Reactant); RACT (Reactant or reagent)
                      (reaction with hydroxysuccinimide; polyethylene glycol
                     aldehydes for conjugates with proteins)
                6066-82-6, N-Hydroxysuccinimide
INDEX TERM:
                  ROLE: RCT (Reactant); RACT (Reactant or reagent)
                     (reaction with methoxypolyethylene glycol acetic acid;
                     polyethylene glycol aldehydes for conjugates with
                     proteins)
INDEX TERM:
                544707-03-1P
                  ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                  (Preparation); RACT (Reactant or reagent)
                      (reaction with methoxypolyethylene glycol aminoethyl
                     ether; polyethylene glycol aldehydes for conjugates with
                     proteins)
INDEX TERM:
                19060-15-2
                  ROLE: RCT (Reactant); RACT (Reactant or reagent)
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(reaction with methoxypolyethylene glycol succinimidyl
                      acetal; polyethylene glycol aldehydes for conjugates with
                     proteins)
                 41365-75-7
INDEX TERM:
                   ROLE: RCT (Reactant); RACT (Reactant or reagent)
                      (reaction with methoxypolyethylene glycol succinimidyl
                      acetate; polyethylene glycol aldehydes for conjugates
                     with proteins)
INDEX TERM:
                 105-36-2, Ethyl bromoacetate 7693-46-1,
                   4-Nitrophenylchloroformate 32315-10-9, Triphosgene
                   ROLE: RCT (Reactant); RACT (Reactant or reagent)
             (reaction with methoxypolyethylene glycol; polyethylene
                     glycol aldehydes for conjugates with proteins)
                6318-30-5
INDEX TERM:
                   ROLE: RCT (Reactant); RACT (Reactant or reagent)
                      (reaction with nitrophenylchloroformate; polyethylene
                     glycol aldehydes for conjugates with proteins)
IT
     14697-46-2, Pentane-1,2,5-triol
    RL: RCT (Reactant); RACT (Reactant or reagent)
       (cyclization; polyethylene glycol aldehydes for conjugates with
       proteins)
     14697-46-2 CAPLUS
    1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)
CN
        ОН
HO-CH_2-CH-(CH_2)_3-OH
    112344-11-3DP, Acrylic acid-ethylene oxide graft copolymer,
reaction products with hydroxysuccinimide, aminodiethoxypropane, and
    aldehyde formation 533881-58-2P 544706-95-8P
    544706-97-0P 544706-99-2P 544707-02-0P
    544707-05-3P 544708-06-7P
    RL: IMF (Industrial manufacture); PREP (Preparation)
        (polyethylene glycol aldehydes for conjugates with proteins)
    112344-11-3 CAPLUS
RN
    2-Propenoic acid, polymer with oxirane, graft (9CI) (CA INDEX NAME)
CN
    CM
         1
    CRN 79-10-7
    CMF C3 H4 O2
HO-C-CH-CH2
    CM
    CRN 75-21-8
    CMF C2 H4 O
```

RN 533881-58-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy)- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-O-CH₂-CH₂-O- n Me

RN 544706-95-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544706-97-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)

RN 544706-99-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(4-oxobutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-02-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544707-05-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-O-C-NH- CH_2 - CH_2 -O-CH₂- CH_2 -O-Me

RN 544708-06-7 CAPLUS
CN Poly(oxy-1,2-ethanediyl), α-[[(3-oxopropyl)amino]carbonyl]-ωmethoxy- (9CI) (CA INDEX NAME)

$$ohc-ch_2-ch_2-nh-c-c-ch_2-ch_2-ch_2-n$$

IT 67665-19-4P 92451-01-9P 544706-94-7P 544706-96-9P 544706-98-1P 544707-00-8P

544707-01-9P 544707-04-2P 544707-06-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

namental de la completa del completa del completa de la completa del la completa de la completa del la completa de la completa

(polyethylene glycol aldehydes for conjugates with proteins)

RN 67665-19-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy-(9CI) (CA INDEX NAME)

MeO
$$CH_2$$
 CH_2 OH_2 CH_2 OH_2 CH_3 CH_4 CH_5 $CH_$

RN 92451-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[(2,5-dioxo-1-pyrrolidinyl)oxy]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

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RN 544706-94-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544706-96-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-[(4,4-dimethoxybutyl)amino]-3-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544706-98-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(4,4-diethoxybutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} \text{OEt} & \text{O} \\ \mid & \mid \\ \text{EtO-CH-(CH2)_3-NH-C} & \text{O-CH}_2\text{-CH}_2 \\ \hline \end{array}$$

RN 544707-00-8 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(4,4-dimethoxybutyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[(3,3-diethoxypropyl)amino]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-04-2 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propoxy]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-06-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propyl]- ω -methoxy- (9CI) (CA INDEX NAME)

IT 1659-31-0, Di-2-pyridyl carbonate 9004-74-4,

Methoxypolyethylene glycol

RL: RCT (Reactant); RACT (Reactant or reagent)

(polyethylene glycol aldehydes for conjugates with proteins)

RN 1659-31-0 CAPLUS

CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)

RN 9004-74-4 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α-methyl-ω-hydroxy- (9CI) (CA INDEX NAME)

IT 135649-01-3P 146167-55-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with aminodiethoxypropane; polyethylene glycol aldehydes for conjugates with proteins)

RN 135649-01-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
0 & \hline
0 & CH_2 & CH_2 \\
\hline
\end{array}$$
OME

RN 146167-55-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(2-pyridinyloxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

IT 124661-64-9P 174569-25-6P

RL: IMF (Industrial manufacture); RCT-(Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with aminodimethoxybutane; polyethylene glycol aldehydes for conjugates with proteins)

RN 124661-64-9 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[(4-nitrophenoxy)carbony1]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 174569-25-6 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
 & O \\
 & O \\
 & C \\$$

IT 58320-73-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with dioxolanedimethylpropanol; polyethylene glycol aldehydes for conjugates with proteins)

RN 58320-73-3 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[(4-methylpheny1)sulfony1]- ω -methoxy-(9CI) (CA INDEX NAME)

$$\mathsf{MeO} = \mathsf{CH}_2 - \mathsf{CH}_2 - \mathsf{O} = \mathsf{Ne} =$$

IT 80506-64-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with dipyridiyl carbonate; polyethylene glycol aldehydes for conjugates with proteins)

RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -(2-aminoethy1)- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & \\ \text{MeO} & & \\ \hline \end{array} \begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{O} \\ \hline \end{array} \begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{NH}_2 \\ \end{array}$$

IT 67665-18-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

RN 67665-18-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2 - CH_2 - O CH_2 - CO_2H$$

IT . 125220-94-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for conjugates with proteins)

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2-CH_2-O$$
 $CH_2-CH_2-CO_2H$

IT 6066-82-6, N-Hydroxysuccinimide RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol acetic acid; polyethylene glycol aldehydes for conjugates with proteins)

RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

IT 544707-03-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol aminoethyl ether; polyethylene glycol aldehydes for conjugates with proteins)

RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX NAME)

IT 19060-15-2

RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with methoxypolyethylene glycol succinimidyl acetal; polyethylene glycol aldehydes for conjugates with proteins)

RN 19060-15-2 CAPLUS

CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)

IT 41365-75-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetate;

polyethylene glycol aldehydes for conjugates with proteins)

RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)

IT 105-36-2, Ethyl bromoacetate 7693-46-1,
4-Nitrophenylchloroformate 32315-10-9, Triphosgene

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with methoxypolyethylene glycol; polyethylene glycol
aldehydes for conjugates with proteins)

RN 105-36-2 CAPLUS

CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

RN 7693-46-1 CAPLUS

CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)

RN 32315-10-9 CAPLUS

CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

IT 6318-30-5

RE: RCT (Reactant); RACT (Reactant or reagent) (reaction with nitrophenylchloroformate; polyethylene glycol aldehydes for conjugates with proteins)

RN 6318-30-5 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)

L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:

2004:142840 CAPLUS

DOCUMENT NUMBER:

140:181998

ENTRY DATE:

Entered STN: 22 Feb 2004

TITLE:

Novel monofunctional polyethylene glycol aldehydes

INVENTOR(S):

Rosen, Perry; Nho, Kwang

PATENT ASSIGNEE (S):

Sun Bio, Inc., USA

SOURCE:

U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S.

Ser. No. 303,260. CODEN: USXXCO

DOCUMENT TYPE:

Patent English

LANGUAGE:

INT. PATENT CLASSIF.:

MAIN:

C08G065-00

US PATENT CLASSIF .:

CLASSIFICATION:

528230000; 528250000 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 63

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004034188 US 6916962	A1 B2	20040219	US 2003-431294		20030507
KR 2003048293	A	20030619	KR 2001-78244		20011211
US 2003153694	A1	20030814	US 2002-303260		20021125
US 2004122164	A1	20040624	US 2003-661268		20030912
US 2004147687	A1	20040729	US 2003-715607		20031118 <
PRIORITY APPLN. INFO.:			KR 2001-78244	Α	20011211.
			US 2002-348452P	P	20020116
			US 2002-381503P	P	20020517
			US 2002-407741P	P	20020903
			US 2002-303260	A2	20021125
			US 2003-431294	A2	20030507
		am 1. 1501 o	US 2003-661268	A2	20030912
PATENT CLASSIFICATION CO	DES:				

TRIBIT CHADDITICATION CODED.				
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES		
US 2004034188	ICM INCL	C08G065-00 528230000; 528250000		
US 2004034188	NCL ECLA	528/230.000; 528/250.000 C08G065/324; C08G065/329; C08G065/331; C08G065/333U		
US 2003153694	NCL ECLA	525/523.000; 558/260.000; 560/157.000; 564/060.000 C08G065/329; C08G065/331; C08G065/333U		

US 2004122164 NCL 525/054.100; 528/230.000; 525/526.000
ECLA C08G065/324; C08G065/329; C08G065/331; C08G065/33U
US 2004147687 NCL 525/389.000; 525/403.000

ECLA C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--

ABSTRACT:

The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

SUPPL. TERM:

polyethylene glycol aldehyde therapeutic active protein

pegylation

INDEX TERM:

Polyoxyalkylenes, preparation

ROLE: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (aldehyde derivs.; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active

proteins)

INDEX TERM:

Proteins

ROLE: THU (Therapeutic use); BIOL (Biological study); USES

(Uses)

(pegylation of; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active

made analysis of the Company (Application) and the Company of the

```
proteins)
INDEX TERM:
                 544706-95-8P
                   ROLE: IMF (Industrial manufacture); PREP (Preparation)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
INDEX TERM:
                 6318-30-5P 58320-73-3P 67665-18-3P
                   , Methoxypolyethylene glycol acetic acid 67665-19-4P
                   , Methoxypolyethylene glycol ethyl acetate
                   124661-64-9P 135649-01-3P
                   146167-55-7P 544706-94-7P
                   544706-96-9P 544707-00-8P
                   544707-01-9P 544707-03-1P
                   544707-04-2P 544707-06-4P
                   658083-74-0P 658083-75-1P
                   ROLE: IMF (Industrial manufacture); RCT (Reactant); PREP
                   (Preparation); RACT (Reactant or reagent)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
INDEX TERM:
                 314065-74-2DP, Acrylic acid-ethylene oxide graft
                   copolymer methyl ether, ester with N-hydroxysuccinimide,
                   displacement reaction products with 1-amino-4,4-
                   dimethoxybutane, deacetalized compds. 533881-58-2P
                   544706-97-0P 544706-99-2P
                   544707-02-0P 544707-05-3P
                   544708-06-7P
                   ROLE: IMF (Industrial manufacture); THU (Therapeutic use);
                   BIOL (Biological study); PREP (Preparation); USES (Uses)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
INDEX TERM:
                 67-64-1, Acetone, reactions 98-59-9, Tosyl
                   chloride 105-36-2, Ethyl bromoacetate
                   1659-31-0, Di-2-pyridyl carbonate 6066-82-6
                   , N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl
                   chloroformate 9004-74-4, Methoxypolyethylene
                  glycol 14697-46-2, Pentane-1,2,5-triol
                   19060-15-2 32315-10-9, Triphosgene
                   41365-75-7 80506-64-5 125220-94-2
                   , Methoxypolyethylene glycol propionic acid
                   152552-24-4, Acrylic acid-methoxypolyethylene glycol
                   graft copolymer 314065-74-2, Acrylic acid-ethylene
                   oxide graft copolymer methyl ether 314065-74-2D,
                   Acrylic acid-ethylene oxide graft copolymer methyl ether,
                   ester with N-hydroxysuccinimide
                   ROLE: RCT (Reactant); RACT (Reactant or reagent)
                      (novel monofunctional polyethylene glycol aldehydes for
                      pegylation of therapeutically active proteins)
IT
     544706-95-8P
     RL: IMF (Industrial manufacture); PREP (Preparation)
        (novel monofunctional polyethylene glycol aldehydes for pegylation of
        therapeutically active proteins)
RN 544706-95-8 CAPLUS
     Poly(oxy-1,2-ethanediyl), \alpha-methyl-\omega-[2-oxo-2-[(3-
CN
     oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)
```

$$OHC-CH_2-CH_2-NH-C-CH_2-O-CH_2-CH_2-CH_2-O-NH-Ne$$

IT 6318-30-5P 58320-73-3P 67665-18-3P,

Methoxypolyethylene glycol acetic acid 67665-19-4P,

Methoxypolyethylene glycol ethyl acetate 124661-64-9P

135649-01-3P 146167-55-7P 544706-94-7P

544706-96-9P 544707-00-8P 544707-01-9P

544707-03-1P 544707-04-2P 544707-06-4P

658083-74-0P 658083-75-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

(Reactant or reagent)

(novel monofunctional polyethylene glycol aldehydes for pegylation of

therapeutically active proteins)

RN 6318-30-5 CAPLUS

CN

1,3-Dioxolane-4-propanol, 2,2-dimethyl- (9CI) (CA INDEX NAME)

RN 58320-73-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-methylphenyl)sulfonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\text{MeO} = \begin{bmatrix} \text{CH}_2 - \text{CH}_2 - \text{O} \\ \text{In} \end{bmatrix} \begin{bmatrix} \text{MeO} \\ \text{O} \end{bmatrix}$$

RN 67665-18-3 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(carboxymethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2 - CH_2 - O$$
 $CH_2 - CO_2H$

RN 67665-19-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-ethoxy-2-oxoethyl)- ω -methoxy-(9CI) (CA INDEX NAME)

MeO
$$CH_2$$
 CH_2 OH_2 OH_2 OH_2 OH_2 OH_2 OH_2

RN 124661-64-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[(4-nitrophenoxy)carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
 & O \\
 & O \\$$

RN 135649-01-3 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[[(2,5-dioxo-1-pyrrolidiny1)oxy]carbony1]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c}
 & \circ \\
 & \circ \\$$

RN 146167-55-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(2- pyridinylexy)carbonyl]amino]ethoxy]- (9CI)- (CA-INDEX-NAME)-

RN 544706-94-7 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[(3,3-diethoxypropyl)amino]-2-oxoethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544706-96-9 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[3-[(4,4-dimethoxybuty1)amino]-3-

oxopropyl]-ω-methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2$$
 CH_2 CH_2 CH_2 CH_3 CH_4 CH_2 CH_2 CH_4 CH_5 CH_6 CH_6 CH_6 CH_7 CH_8 $CH_$

RN 544707-00-8 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[[(4,4-dimethoxybuty1)amino]carbony1]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-01-9 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[(3,3-diethoxypropyl)amino]carbonyl]amino]ethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-03-1 CAPLUS

CN 1,3-Dioxolane-4-propanol, 2,2-dimethyl-, 4-nitrobenzoate (9CI) (CA INDEX NAME)

RN 544707-04-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[2-[[[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propoxy]carbonyl]aminolethyl]- ω -methoxy- (9CI) (CA INDEX NAME)

RN 544707-06-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,2-dimethyl-1,3-dioxolan-4-yl)propyl]- ω -methoxy- (9CI) (CA INDEX NAME)

Me O (CH₂) 3
$$-$$
 O CH₂ - CH₂ $-$ OMe

RN 658083-74-0 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[3-(2,5-dioxo-1-pyrrolidinyl)-2-oxopropyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & \\ & &$$

RN 658083-75-1 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -[[(3,3-diethoxypropyl)amino]carbonyl]- ω -methoxy- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} \text{OEt} & \text{O} \\ & \text{CH-} \text{CH}_2\text{-}\text{CH}_2\text{-}\text{NH-} \text{C} \\ \hline \end{array} \begin{array}{c|c} \text{O-} \text{CH}_2\text{-}\text{CH}_2 \\ \hline \end{array} \begin{array}{c|c} \text{OMed} \\ \text{NH-} \end{array}$$

IT 314065-74-2DP, Acrylic acid-ethylene oxide graft copolymer methyl ether, ester with N-hydroxysuccinimide, displacement reaction products with 1-amino-4,4-dimethoxybutane, deacetalized compds.

533881-58-2P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 314065-74-2 CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1 CMF C H4 O

H3C-OH

CM 2

CMF (C3 H4 O2 . C2 H4 O) x

CCI PMS

CM 3

CRN 79-10-7 CMF C3 H4 O2

CM 4

CRN 75-21-8 CMF C2 H4 O



RN: 533881=58=2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -(4-oxobutoxy)- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-O-CH₂-CH₂-O-Ne

RN 544706-97-0 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -methy1- ω -[3-oxo-3-[(4-oxobuty1)amino]propoxy]- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-NH-C- CH_2 - CH_2 -

RN 544706-99-2 CAPLUS

CN Poly(oxy-1,2-ethanediy1), α -[[(4-oxobuty1)amino]carbony1]- ω -methoxy- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-NH- C - CH_2

544707-02-0 CAPLUS RN

CN Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[[(3oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

$$OHC-CH_2-CH_2-NH-C-NH-CH_2-CH_2-O-CH_2-CH_2-O-NH-Me$$

544707-05-3 CAPLUS RN

Poly(oxy-1,2-ethanediyl), α -methyl- ω -[2-[[(4-CN oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

OHC-
$$(CH_2)_3$$
-O-C-NH- CH_2 - CH_2 -O-CH₂- CH_2 -O-Me

RN544708-06-7 CAPLUS

Poly(oxy-1,2-ethanediy1), α -[[(3-oxopropy1)amino]carbony1]- ω -CN methoxy- (9CI) (CA INDEX NAME)

OHC-
$$CH_2$$
- CH_2 - NH - C - CH_2 - CH_2 - CH_2 - DM - DM

IT67-64-1, Acetone, reactions 98-59-9, Tosyl chloride 105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1, ----4-Nitrophenyl-ehloroformate 9004-74-4, Methoxypolyethylene glycol 14697-46-2, Pentane-1,2,5-triol 19060-15-2 32315-10-9, Triphosgene 41365-75-7 80506-64-5 125220-94-2, Methoxypolyethylene glycol propionic acid 152552-24-4, Acrylic acid-methoxypolyethylene glycol graft copolymer 314065-74-2, Acrylic acid-ethylene oxide graft copolymer methyl ether 314065-74-2D, Acrylic acid-ethylene oxide graft copolymer methyl ether, ester with N-hydroxysuccinimide RL: RCT (Reactant); RACT (Reactant or reagent) (novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 67-64-1 CAPLUS

CN 2-Propanone (9CI) (CA INDEX NAME)

RN ---98-59-9---CAPLUS

CN Benzenesulfonyl chloride, 4-methyl- (9CI) (CA INDEX NAME)

RN 105-36-2 CAPLUS

CN Acetic acid, bromo-, ethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

RN 1659-31-0 CAPLUS

CN 2-Pyridinol, carbonate (2:1) (ester) (9CI) (CA INDEX NAME)

RN 6066-82-6 CAPLUS

CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)

RN 7693-46-1 CAPLUS

CN Carbonochloridic acid, 4-nitrophenyl ester (9CI) (CA INDEX NAME)

RN 9004-74-4 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (9CI) (CA INDEX NAME)

RN 14697-46-2 CAPLUS

CN 1,2,5-Pentanetriol (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

RN 19060-15-2 CAPLUS

CN 1-Butanamine, 4,4-dimethoxy- (9CI) (CA INDEX NAME)

RN 32315-10-9 CAPLUS

CN Methanol, trichloro-, carbonate (2:1) (9CI) (CA INDEX NAME)

RN 41365-75-7 CAPLUS

CN 1-Propanamine, 3,3-diethoxy- (9CI) (CA INDEX NAME)

RN 80506-64-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-aminoethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

MeO
$$CH_2-CH_2-O$$
 $CH_2-CH_2-NH_2$

RN 125220-94-2 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(2-carboxyethyl)- ω -methoxy- (9CI) (CA INDEX NAME)

RN 152552-24-4 CAPLUS

CN 2-Propenoic acid, polymer with α-methyl-ω-hydroxypoly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

CRN 9004-74-4

CMF (C2 H4 O)n C H4 O

CCI PMS

HO
$$CH_2-CH_2-O$$
 CH_3

CM 2

CRN 79-10-7 CMF C3 H4 O2

RN 314065-74-2 CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

нзс-он

CRN 112344-11-3

CMF (C3 H4 O2 . C2 H4 O) x

CCI PMS

CM 3

CRN 79-10-7 CMF C3 H4 O2

manga mangan ni singgangang mengang terminan salah pangan salah pangan salah pangan sebagai salah pangan sebagai salah pangan sebagai salah pangan sebagai seb

CM 4

CRN 75-21-8 CMF C2 H4 O



RN 314065-74-2-CAPLUS

CN 2-Propenoic acid, polymer with oxirane, methyl ether, graft (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1 CMF C H4 O

нзс-он

CM 2

CRN 112344-11-3

CMF (C3 H4 O2 . C2 H4 O) \times

CCI PMS

-G11------

CRN 79-10-7 CMF C3 H4 O2

CM 4

CRN 75-21-8 CMF C2 H4 O



Searched by Paul Schulwitz 571-272-2527